Pasture variety row evaluation.

Western Australia Department of Agriculture

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INTRODUCTION

This was the first year of a project funded by the Australian Wool Corporation investigating the effect of medic species, rhizobial strain and deep ripping on pasture production from deep sandy soils. As seen by the rainfall figures below, 1987 was a very dry season with especially poor finishing rains. This combined with the low potential of these sandy soils meant very low yields when compared to more favourable areas of the state.

The three trials reported in this summary were all conducted at East Chapman Research Station. All were situated on deep yellow sand typical of the Eradu Sandplain. This soil has a pH of approximately 5.6 in 1:5 water solution and a water holding capacity of around 50-70mm/m depth.

1987 RAINFALL AT EAST CHAPMAN RESEARCH STATION

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TRIAL TITLE: Pasture variety row evaluation.

TRIAL No. : 87GE78

DESIGN : 220 varieties (from 29 species)
          Grown in 3m rows * 2 replicates

SOWING RATE: 0.5g/m

SOWING DATE: 8/6/87

RESULTS

The following table shows results for varieties which had a mean seed yield per 3m row of over 7g or over 120mg per plant. The density of plants per row varied due to differences in seed viability, however plant number had less effect on row yield than it did on yield per plant.
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The predominant and recommended pasture cultivar for this soil type is c.v. Harbinger. There were a few varieties which showed greater vigour than Harbinger and a large number which had a greater seed yield. Among the higher seed yielding lines were the commercial cultivars: Parrabinger, Parragio and Serena. Much of the advantage these three cultivars had over Harbinger was due to lower damage inflicted by aphids. Parrabinger and Parragio have some aphid tolerance and Serena flowered and set seed before aphids reached very high numbers.

There was little relationship between flowering time and seed yields. This could be due to other factors such as seed size and species affecting the time taken for seed to ripen. Also aphids, which reached very high numbers for only one to two weeks, may have had a larger effect on seed yields of varieties for which this was a critical time in terms of reproduction. Table 2 below indicates the effect of flowering time on potential seed yield. A lower proportion of lines that started to flower in the ninth week after germination managed to achieve a seed yield of over 7g. This may be related to the time when aphids were at their highest numbers which was recorded to be approximately twelve weeks after germination.

<table>
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<tr>
<th>WEEK AFTER GERMINATION THAT FLOWERING COMMENCED</th>
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<th>NO. VARIETIES YIELDING OVER 7g SEED/3m ROW</th>
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The best lines in terms of seed yield, vigour and aphid tolerance will be further examined in plot trials in 1988.